

# Best Practices for Selecting an Enterprise Search Tool



Businesses looking to be leaders in their industry need to leverage technology at an ever-increasing ratio, as advances in software drive businesses to take advantage of the increases in productivity they offer. Indeed, the pressures to increase productivity through technology apply not only to businesses leading the pack, but also to those simply trying to keep up.

One area where technology's promise has long been touted, but only recently been realized is enterprise search, sometimes called enterprise search and retrieval, or ESR.

Evidence of this realization came in a one-two punch during 2011, when two technology giants made eye-opening investments in ESR. In October, Oracle bought ESR-focused Endeca for an estimated \$1 billion, while earlier in the year Hewlett-Packard bought search-specialist Autonomy for about \$10 billion. Little wonder, then, that the technology-consulting firm Gartner Inc. is expecting the ESR market to increase over the next three years from about \$1.3 billion in annual revenue to nearly \$2 billion. Technology reporters Ovum also noted in January 2011 that the market for ESR products has never appeared to be so dynamic.

## Enterprise Search as a Mature Technology

Why the burgeoning investment in ESR? In a nutshell, it is because, for those who can deploy the technology effectively, the return on the investment can be so predictable and rapid. One need not make a billion-dollar, or even million-dollar, investment to reap the benefits of enterprise search, either. Knowledge workers spend much of their time searching for the knowledge they need to do their jobs. An oft-quoted statistic from market research firm IDC has it that such workers spend about 9.5 hours per week tracking down information. Any way that technology can reduce that total makes those workers more productive, assuming the technology is affordable. Take the example of a call center. If operators can access the information necessary to satisfy the callers 10 percent faster after the deployment of an ESR system, the investment will likely pay for itself before long. Careful planning of an ESR deployment usually reveals reliable figures that objectively quantify the savings that the technology can bring.

ESR can be particularly valuable for organizations that have no primary repository for their intellectual capital. It enables workers to find the information they need to do their jobs from a range of sources such as the corporate intranet, social media, and customer-facing websites. It also can be a foundation on which an organization can build a versatile and adaptable information environment that can give business users a secure and accurate view of all relevant data for business analytics, statistical analyses, and media and market-trend tracking.

The capabilities of today's ESR solutions deliver value by enabling your people to spend more time doing what you hired them to do, such as meeting with customers. A well-deployed ESR solution can help your reps expeditiously access everything they need to know about your clients' businesses—such as where those business are most profitable and where they need to become more so. Combined with advanced analytics, such information could conceivably be valuable to your clients in its own right. Looking within your company, an ESR solution can scan through structured and unstructured content to deliver thorough and very precise intelligence about your organization's strengths

and weaknesses. This sort of intelligence can point the way toward exploiting new markets that value what you do best, and making the adjustments that do the most to minimize your weaknesses. The reason why ESR is now paying off like it had not until recently is twofold. First, the amount of information that companies must access in order keep up with the competition has multiplied many times over in past decades, and continues to do so. Organizations have corporate intranets with email records and wikis, databases of organizational analytics, presence on social media, and information-gathering consumer-facing websites—and that does not even include the explosion of content beyond the corporate firewall. Second, search technology has now arrived at a point where applications can be far more user-friendly than ever before.

Going back to the 1990s, when ESR tools first became generally available, typical ESR applications were notoriously difficult to deploy, and required knowledge of advanced coding languages in order to draft useful queries. That is, even if the application could reach wide and deep for information, the person in need of that information had to utilize IT personnel to seek answers to relevant questions. Over the past few years, however, developers have produced next-generation ESR solutions that incorporate decades of enterprise-search experience, but with cleaner and lighter code, and better performance. In addition, the new ESR solutions often include an intuitive user interface, and can integrate with advanced analytic and reporting capabilities.

## **What to Look for in Enterprise Search**

Nothing is more important in ESR solution than the value you derive from it. Of course, different sorts of organizations will calculate this value differently, but a number of guidelines to identifying value apply across the board.

Many medium and smaller businesses will get the most out of their ESR investment if they deploy a cloud-based solution. Deploying ESR capability from the cloud, as a service rather than as a licensed application, can reduce your initial investment in enterprise search significantly. Doing so eliminates your need to install and run the software on your own computers, simplifying maintenance and support. Security would seem to be a significant concern, but in many cases, the safety of an organization's data will be enhanced when hosted in the cloud because many cloud providers are able to devote resources to data security that clients may not be able to afford. In fact, the U.S. government is increasingly turning to the cloud for computing resources and capacity, indicating that not only are perceived security risks often overstated, but also that the cloud computing is a cost-effective strategy.

As cloud-oriented providers offer their services and storage through utility pricing, customers pay only for the resources they actually use. This almost always is a more affordable way to enhance an organization's technological capability, since the organization does not have to invest in the servers, development and integration, and maintenance costs associated with purchasing such capability and hosting it in house. Further, when an organization's demand for the cloud-based resources expands or even spikes, the capacity is already available. Cloud-based computing scales easily. A fourth advantage of many cloud-based services is that they are available regardless of the user's location or device as long as the user has a device that can access the Web.

The diversity of forms in which information appears today demands that your ESR solution be able to access, analyze, and process unstructured as well as structured content. Think of all the data sources in your organization, such as databases, document servers, SharePoint, CRM systems, and add to that the unstructured sources outside your firewall, such as Twitter and Facebook. Be certain that your ESR solution can access and retrieve all the content types that present value to your organization.

After being satisfied that the ESR solution you are considering will be able to find and retrieve the content your organization is interested in, evaluate the solution for its usability. First-generation ESR tools required IT personnel to code the queries, but more advanced solutions are designed to fit the usability requirements of the workers who need the content to make business decisions. That is, the

new interfaces are more intuitive, and geared to the priorities of managers and executives, rather than IT personnel. Look for ESR solutions with interfaces that allow you to ask the questions you need answers to, a capability otherwise known as role-specific or contextual search.

Look for an ESR solution that you or the provider can configure to find the sort of results most relevant to your organization. Online search engines typically return links based on some measure of those links' popularity with Web users. With enterprise search, however, more often than not the number of times that content has been accessed will not be the most relevant parameter in the search algorithm. In the example of a law office, a partner might often need to find obscure documents that demonstrate legal precedents relevant to the cases at hand.

An ESR solution that has integrated analytics is likely going to add more to your organization's productivity than a stand-alone tool would. Analytics, which we discuss in depth in another white paper, point to the meaning present in the content that the ESR tool retrieves. You should also assure yourself that the solution is secure, protecting your data from unauthorized access not only from the cloud, but also from internal sources. The personnel using your ESR tool should be able to access only the data useful for the work they are doing. Security will be the subject of an upcoming white paper.

ESR solutions that utilize natural language processing can often be particularly valuable when searching through unstructured content such as email, social-network content, and text-box comments solicited on your Web site. Some of the features of natural language processing include:

- The ability to recognize verb conjugations (such as be, is, are, was, etc.) and plurals
- The ability to find synonyms for the intended sense of words included in the search (such as treat, alleviate, cure, heal)
- The ability to generalize (such as recognizing non-Hodgkin's lymphoma as a form of cancer, and more generally as a disease)
- The ability to retrieve content that matches the concept presented in the query (such as matching "political instability" to "insurgency," "political demonstration," and so on)
- The ability to search on the basis of queries that begin with such words as "where," "who," "when," and so on
- The ability to highlight the paragraph(s) or sentence(s) within the returned content that are most relevant to the query
- The ability to understand queries that use no quotation marks or Boolean operators
- The ability to learn where the relevancy of returned content has degraded to the point of no longer being useful

Your IT personnel will likely be interested to know which specific technology is supporting your ESR solution. One of the most highly regarded search technologies currently in use is the open-source Apache Lucene/Solr. Netflix and many other consumer Web sites depend on Apache Lucene as a key element of their search capabilities.

## Preparing to Deploy Enterprise Search

Depending on your organization's practices and priorities, your first ventures with enterprise search could follow different paths. Regardless of which specific path you take, however, industry experts all advise that you begin your ESR efforts with small projects that have easily quantifiable outcomes. Use ESR in ways that prove its usefulness, and let the lessons learned from initial projects guide your further deployment of the technology.

Many ESR consultants advise adopters of the technology to begin by applying enterprise search to a specific business problem, such as identifying and quantifying value sources and sinks within a particular business function. Simple examples of such a function could be customer support or the supply chain. The results of the search will likely point to strategies for expanding aspects of your most profitable practices. Limiting your use of ESR to industry-specific and role-specific topics will help you to gain the most value from the technology.

Another strategy for selecting initial ESR projects involves first determining how your organization currently uses search, and where within the enterprise knowledge and information resides. That information should guide you toward the search scenarios most likely to produce value for the smallest investment.

Some businesses have had success by deploying ESR initially within a relatively small department, which enables more rapid deployment. That, in turn, allows the business to realize ESR-enabled cost savings on the shortest possible timescales. The experience in a smaller department can then suggest how to deploy the technology on a wider scale.

Whatever strategy you ultimately use when deploying ESR, use the lessons learned from the first projects to guide you toward larger and more widespread use of the technology throughout your organization. Most business executives will approve wider adoption of the technology only after it has proven its value on a more limited scale.

One of the more popular applications of enterprise search today empowers customer service representatives in call centers to help to find relevant content regarding a customer in real time, while the customer is on the phone. When you decide to deploy an ESR system in your organization, you can encourage its general adoption by polling potential users of the system for their preferences regarding the sorts of content they need to search and the most cogent ways to display search results. Users whose target information usually resides in emails can have their particular ESR tool configured to give a higher relevancy score to emails than, say, PowerPoint presentations or Twitter feeds. Combined with the powerful yet surprisingly affordable data analytics available now, enterprise search tools can format the retrieved content into custom charts, graphs, and other data visualizations that highlight the meaning in the content.

## **Conclusion**

The power of advanced enterprise search, in which the leading technology companies of today are investing hundreds of millions of dollars, is available now to medium and smaller companies for a price that can easily be justified by the value it can create. Search technology has matured considerably over the past five to ten years, making the argument to invest in it more compelling than ever. Deployed through the cloud, initial deployments of ESR are far more affordable than the capital investment in facilities and servers and their attendant support and maintenance costs. Further, ESR utilized as a service presents the scalability a business will need as its investment in enterprise search, and business intelligence generally, grows.